

Oceanic Storm Characteristics off the Kennedy Space Center Coast

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Natural cloud-to-ground lightning may behave differently depending on the characteristics of the attachment mediums, including the peak current (inferred from radiation fields) and the number of ground strike locations per flash. Existing literature has raised issues over the years on the behavior of lightning over ocean terrain and these phenomena are not yet well understood. To investigate lightning characteristics over differing terrain we will obtain identical observations over adjacent land and ocean regions during both clear air and thunderstorm periods comparing the electric field behavior over these various terrains. For this, a 3-meter NOAA buoy moored 20NM off the coast of the Kennedy Space Center was instrumented with an electric field mill and New Mexico Tech's slow antenna to measure the electric fields aloft and compared to the existing on-shore electric field mill suite of 31 sensors and a coastal slow antenna. New Mexico Tech's Lightning Mapping Array and the Eastern Range Cloud-to-Ground Lightning Surveillance System, along with the network of high-speed cameras being used to capture cloud-to-ground lightning strikes over the terrain regions to identify a valid data set and verify the electric fields. This is an on-going project with the potential for significant impact on the determination of lightning risk to objects on the ground. This presentation will provide results and instrumentation progress to date.